
Workshop Summary

PerspektivForum “Grand Challenges”

Bill & Melinda Gates Foundation and Stiftung Jugend forscht e. V.

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Title: “Leveraging Alternative Health Data for Improved Global Development Outcomes”

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Summary:

At the moment, companies provide big, crowd-sourced and environmental data for academic research. However, the health data in rural and urban areas in developing countries is not sufficient due to private hospitals, poor coverage of health physicians and public hospitals as well as a low infrastructure of slums and remote areas. These data are necessary to improve the local health care system. New technologies, like high-resolution imaging from satellites in the orbit, can help to identify hidden villages in rural areas to provide health care.

In our workshop, we focused on the retrieval of alternative health data in such rural and urban areas to improve their health and health care system. With specific questions about self-testing kits for malaria, bed nets against mosquitoes, family planning, and infant vaccinations we tried to find alternative and new ways to retrieve the essential data.

One first approach for all the questions mentioned above is to cooperate with residents and schools to inform the children and students about health care and provide access to public health supplies. Malaria is prevalent in rural areas of developing countries. Therefore, the right and fast diagnosis are essential for treatment and infection control. The self-testing kit for malaria provides the diagnosis even in rural areas, which is important for the target group of people with a high fever. The idea is to use drones with infrared cameras to identify people with fever and then offer them the malaria testing kit via the drones. If the number of positive malaria tests increases, health care could be provided by health workers. Malaria is transmitted by mosquitoes. Hence, bed nets against mosquitoes can help in controlling the infection rates. Both, bed nets, as well as repair kits, should be attached to daily life products such as clothes. The repair kits ensure that the owners can repair the already existing bed nets, which then last longer to protect against malaria in the end. Schools can be used for both the distribution of repair kits and nets and the survey of the actual usage of the nets.

Besides Malaria, family planning is a crucial health care sector in developing countries. Women and young girls are often not aware of sexually transmitted diseases and contraceptives. A bonus card system shall remedy the lack of knowledge: they can collect stamps in local health offices for different screenings or counselling. After completing the bonus card, they receive a reward. With the help of these bonus cards, health care and knowledge are not only improved, but also the health clinics receive feedback about the health care and health system in rural and urban areas. To identify the number of infant vaccinations, the number of newborn is needed. One idea is to analyse hormone concentrations in wastewater to receive information about pregnancies for birth cohort evaluations. The basic vaccine status of infants plays a crucial role and needs to be evaluated. The number of used vaccines can be monitored and measured by a small device inside every vaccine package, which sends a short text message after the box is opened. This approach can also be used for the malaria testing kits.

With alternative, new and creative ideas, global health and development outcomes can be improved.